

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PC-21016761	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2004/001484	International filing date (day/month/year) 15.10.2004	Priority date (day/month/year) 17.10.2003
International Patent Classification (IPC) or national classification and IPC F16L 59/02, F16L 59/14		
Applicant Saint-Gobain Isover AB et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

☒ Box No. I Basis of the report

☐ Box No. II Priority

☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

☐ Box No. IV Lack of unity of invention

☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

☐ Box No. VI Certain documents cited

☐ Box No. VII Certain defects in the international application

☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 16.05.2005	Date of completion of this report 04.10.2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Christer Wendenius / MRo Telephone No. +46 8 782 25 00

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/001484

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-26 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 27-28 received by this Authority on 16.05.2005
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1-4 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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15-05-2005

CLAIMS

14P9 Rec'd PCT/PTO 12 APR 2005

1. An insulation system (1) for pipes, containers,
ventilation ducts and like installation parts which have
an outer surface temperature which periodically is below
the dew point of the ambient air, said insulation system
comprising a thermally insulating layer (5) and a layer
of a vapour barrier (2) arranged on one side of the ther-
mal insulating layer, said layers being arranged in such
a manner that the insulation system (1), starting from
the outside, comprises said vapour barrier (2),
characterised by

a layer of hygroscopic material (3) arranged between
the layer of the vapour barrier (2) and the thermally
insulating layer (5), said hygroscopic material (3) being
at least partially connected with the vapour barrier (2),
and

the combination of the vapour barrier (2) and the
hygroscopic material (3) being connected with the ther-
mally insulating layer (5) in such a manner that the
hygroscopic material (3) partially makes contact with the
thermally insulating layer (5).

2. An insulation system as claimed in claim 1, in which
the hygroscopic material (3) is connected with the ther-
mally insulating layer (5) by means of a thermoplastic
binder (4) which is arranged so that, after heating to
a temperature above its melting point, it exposes the
hygroscopic material (3) to the thermally insulating
layer (5).

3. An insulation system as claimed in claim 1, in
which the hygroscopic material (3) is thermoplastic.

4. An insulation system as claimed in claim 1, in
which the vapour barrier (2) and the hygroscopic material
(3) constitute a laminate (7).

5. An insulation system as claimed in claim 2, in
which the vapour barrier (2), the hygroscopic material

(3) and the thermoplastic binder (4) constitute a laminate (7).

6. An insulation system as claimed in claim 5, in which the thermoplastic binder (4) is arranged in a first layer next to the vapour barrier (2) and in a second layer next to the thermally insulating layer (5).

7. An insulation system as claimed in claim 4 or 5, in which the laminate (7) comprises perforations (8) which are adapted to make the hygroscopic material (3) communicate with the ambient air.

8. An insulation system as claimed in claim 1, in which the hygroscopic material (5) is a non-continuous layer.

9. An insulation system as claimed in claim 2, in which the thermoplastic binder (4) is arranged as a non-continuous layer.

10. An insulation system as claimed in claim 1, in which the thermally insulating layer (5) comprises an additional hygroscopic material (14; 14').

11. An insulation system as claimed in claim 10, in which the thermally insulating layer (5) and the additional hygroscopic material (14; 14') constitute a flexible pipe shell, a pleated mat or a laminated mat.

12. An insulation system as claimed in claim 1, in which the hygroscopic material (3) forms a reinforcement of the vapour barrier (2).

13. An insulation system as claimed in claim 4 or 5, in which the laminate (4) has such a width as to form flaps (11; 11a; 11b) which can be made to enclose pipes, containers, ventilation ducts and like installation parts.

14. An insulation system as claimed in any of the claims 1, 4 or 5, in which the vapour barrier (2) has moisture adaptive properties.

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Box No. VIII (iv) DECLARATION: INVENTORSHIP (only for the purposes of the designation of the United States of America)

The declaration must conform to the following standardized wording provided for in Section 214; see Notes to Boxes Nos. VIII, VIII(i) to (v) (in general) and the specific Notes to Box No. VIII (iv). If this Box is not used, this sheet should not be included in the request.

**Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv))
for the purposes of the designation of the United States of America:**

I hereby declare that I believe I am the original, first and sole (if only one inventor is listed below) or joint (if more than one inventor is listed below) inventor of the subject matter which is claimed and for which a patent is sought.

This declaration is directed to the international application of which it forms a part (if filing declaration with application).

This declaration is directed to international application No. PCT/ SE 2004/001484 (if furnishing declaration pursuant to Rule 26ter).

I hereby declare that my residence, mailing address, and citizenship are as stated next to my name.

I hereby state that I have reviewed and understand the contents of the above-identified international application, including the claims of said application. I have identified in the request of said application, in compliance with PCT Rule 4.10, any claim to foreign priority, and I have identified below, under the heading "Prior Applications," by application number, country or Member of the World Trade Organization, day, month and year of filing, any application for a patent or inventor's certificate filed in a country other than the United States of America, including any PCT international application designating at least one country other than the United States of America, having a filing date before that of the application on which foreign priority is claimed.

Prior Applications:

I hereby acknowledge the duty to disclose information that is known by me to be material to patentability as defined by 37 C.F.R. § 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the PCT international filing date of the continuation-in-part application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Citizenship: Swedish

Inventor's Signature: Staffan Tigerfeldt Date: 29-10-04

(if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)

(of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

Name:

Residence:

(city and either US state, if applicable, or country)

Mailing Address:

Citizenship:

Inventor's Signature: Date:

(if not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)

(of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)

☐ This declaration is continued on the following sheet, "Continuation of Box No. VIII (iv)".